

Kentucky Department of Education
Science Adoption 2008-2014

Provided by the Publisher	ISBN - 0073101699		Publisher - Glencoe/McGraw-Hill	
	Chemistry: The Molecular Nature of Matter and Change (Silberberg)			
	Type - P1	Author - Silberberg		
	Copyright - 2006	Edition - 4th	Readability - Titles	Not Available for Higher Ed
	Course - Chemistry		Grade(s) -	9,10,11,12
	Teacher Edition ISBN if applicable			0072964391
Provided by the Publisher				

Overall Recommendation:

☒ **Recommended as Basal**

Overall Strengths, Weaknesses, Comments:

This is text text takes a macroscopic to molecular approach to teaching and learning chemistry. The text provides numerous opportunities for student practice in the form of problems at the end of each chapter. Within the "Problems in Context" section, authentic problems are used to assist students in making connections. The text includes numerous illustrations throughout the chapter and makes connections to Organic and Biochemistry along with connections to "Green" chemistry. The labs associated with this text are in a separate laboratory manual.

CRITERIA

This basal resource ...

A. Encompasses KY Content Standards & Grade Level Expectations

☒ **Strong Evidence**
☐ **Moderate Evidence**
☐ **Little or No Evidence**

☒ Text is designed to be used in an elective course outside the Program of Studies

1) Includes the 7 Big Ideas of science to the following extent:

- | | | | | |
|---|--|--|---------------------------------|---|
| a) Structure and Transformation of Matter | <input checked="" type="checkbox"/> Strong | <input type="checkbox"/> Moderate | <input type="checkbox"/> Little | <input type="checkbox"/> N/A |
| b) Motion and Forces | <input type="checkbox"/> Strong | <input type="checkbox"/> Moderate | <input type="checkbox"/> Little | <input checked="" type="checkbox"/> N/A |
| c) The Earth and the Universe | <input type="checkbox"/> Strong | <input type="checkbox"/> Moderate | <input type="checkbox"/> Little | <input checked="" type="checkbox"/> N/A |
| d) Unity and Diversity | <input type="checkbox"/> Strong | <input type="checkbox"/> Moderate | <input type="checkbox"/> Little | <input checked="" type="checkbox"/> N/A |
| e) Biological Change | <input type="checkbox"/> Strong | <input type="checkbox"/> Moderate | <input type="checkbox"/> Little | <input checked="" type="checkbox"/> N/A |
| f) Energy Transformation | <input type="checkbox"/> Strong | <input checked="" type="checkbox"/> Moderate | <input type="checkbox"/> Little | <input type="checkbox"/> N/A |
| g) Interdependence | <input type="checkbox"/> Strong | <input type="checkbox"/> Moderate | <input type="checkbox"/> Little | <input checked="" type="checkbox"/> N/A |

2) Addresses content-specific enduring understandings from the related Program of Studies

☒ Strong ☐ Moderate ☐ Little ☐ N/A

standards.

- 3) **Addresses content-specific skills and concepts from the related Program of Studies standards.** ☒ Strong ☐ Moderate ☐ Little ☐ N/A
- 4) **Content addressed is current, relevant and non-trivial** ☒ Strong ☐ Moderate ☐ Little ☐ N/A
- 5) **Provides opportunities for critical thinking/reasoning** ☒ Strong ☐ Moderate ☐ Little ☐ N/A
- 6) **Strengths, Weaknesses, Comments:**
- Specific strengths-which areas/concepts are covered exceptionally well?
 - Specific weaknesses-which areas/concepts would likely require supplementing?

Structure and Transformation of matter topics are covered in great detail in this text while Energy Transformation standards which are applicable are covered moderately covered.

B. Functionality & Suitability

☒ **Strong Evidence**
☐ **Moderate Evidence**
☐ **Little or No Evidence**

- 1) **Suitability** ☒ Strong ☐ Moderate ☐ Little ☐ N/A
- Should be suitable for use with a diverse population and is free of bias regarding race, age, ethnicity, gender, religion, social and/or geographic environment; is free of stereotyping or bias of any kind.
- 2) **Content quality** ☒ Strong ☐ Moderate ☐ Little ☐ N/A
- Free from factual errors
 - Content is presented conceptually when possible—more than a mere collection of facts
 - Content included accurately represents the knowledge base of the discipline
 - Theories/scientific models contained represent a broad consensus of the scientific community
- 3) **Connections to Literacy** ☐ Strong ☒ Moderate ☐ Little
Note: may apply to either student or teacher editions
- Employs a variety of reading levels and is grade/level appropriate
 - Contains pre, during, post reading activities
 - Provides opportunities for summarizing, reviewing, and reinforcing vocabulary skills and concepts at multiple levels of difficulty for a variety of learning styles.
 - Student text provides opportunity to integrate reading and writing
 - Uses vocabulary that is age and content appropriate
 - Focuses on critical vocabulary vs. extensive lists
 - Identifies key vocabulary through definitions in both text and glossary
 - Engaging text- does the text facilitate learning?
 - Does understanding the text require having performed the imbedded activities?
- 4) **Connections to Technology** ☒ Strong ☐ Moderate ☐ Little

Kentucky Department of Education
Science Adoption 2008-2014

- Integrates technology and reflects the impact of technological advances
- Uses technology in the collection and/or manipulation of authentic data

5) Support for Diverse Learners

☐ Strong ☐ Moderate ☒ Little

- Provides support for ESL students
 - Provides support for differentiation of instruction in diverse classrooms
- Note: may apply only to teacher edition*

6) Strengths, Weaknesses, Comments:

- Reviewers may provide page numbers to point out specific strong examples for individual evaluation standards.

Technology includes the use of an online learning center and multimedia supplements (power point outlines, art/photo library, worked examples and tables) on CD-ROM.

C. Supports Inquiry and Skill Development

☐ Strong Evidence
☒ Moderate Evidence
☐ Little or No Evidence

1) Promotes Inquiry, research and Application of Learning

☐ Strong ☒ Moderate ☐ Little

- Provides opportunities for inquiry and research that includes activities such as self-selecting topics, formulating authentic questions, gathering information, researching resources, observing, interviewing, and evaluating information, analyzing and synthesizing data and communicating findings and conclusions.
 - Requires students to use higher-level cognitive skills (analysis, synthesis, evaluation, etc.)
 - Provides activities and projects for students to deepen their knowledge and cultivate and strengthen problem-solving and decision-making skills.
 - Provides opportunities for application of learned concepts.
 - Uses a variety of relevant charts, graphs, diagrams, time lines, and other illustrations to invite and motivate students to engage in discussion, problem solving, and other high-order thinking skills.
 - Emphasizes conceptual understandings that invite students to predict, conclude, evaluate, develop and extend ideas to support reasoning.
- Note: may apply to either teacher or student edition*

2) Skill Development

☐ Strong ☒ Moderate ☐ Little

- Provides opportunities to make sense of data
 - Provides opportunities for critical thinking and reasoning (analyze arguments, distinguish fact/opinion, recognize bias)
 - Provides opportunities to examine a range of types of evidence
 - Contains embedded activities (or extensions) that emphasize use of technology for problem solving
- Note: may apply to either teacher or student edition*

3) Strengths, Weaknesses, Comments:

Available resources include electronic multimedia and related instructor's resources but laboratory learning activities are missing but available separately.

D. Supports Best Practices of Teaching and Learning

- ☐ Strong Evidence
☒ Moderate Evidence
☐ Little or No Evidence

1) Engages Students

☐ Strong ☒ Moderate ☐ Little

- Includes content geared to the needs, interests, and abilities of students
 - Engages and motivates students using components such as real-life situations, simulations, experiments, and data gathering.
 - Includes information and activities that assist students in seeing relevance of concepts (where appropriate) to their own lives and experiences
 - Provides a variety of strategies, activities, and materials to enhance student learning at the appropriate learning levels
 - Activities are truly congruent to the concepts addressed, not merely correlated
- Note: may apply to either teacher or student edition*

2) Uses Assessment to Inform Instruction

☐ Strong ☐ Moderate ☒ Little

- Includes multiple means of assessment as an integral part of instruction
 - Provides evaluation measures in the teacher edition that supports differentiated learning activities
 - Embedded assessments reflect a variety of Depth of Knowledge levels
- Note: may apply to either teacher or student edition*

3) Strengths, Weaknesses, Comments:

- Reviewers may provide page numbers to point out specific strong examples for individual evaluation standards

Strategies and activities provided in the text are limited other than being numerous sample problems available. No apparent multiple means of assessment were observed in the text materials. Real life situations are addressed in the reading and in certain portions of the end of chapter practice problems.

E. Has an Organization/ Format that Supports Learning and Teaching

- ☐ Strong Evidence
☐ Moderate Evidence
☐ Little or No Evidence

1) Organizational Quality

☒ Strong ☐ Moderate ☐ Little

- Print and/or electronic materials present minimal barriers to learners
- Presents chapters/lessons in an organized and logical sequence
- Provides clearly stated objectives for each lesson.
- Uses text features (e.g., titles, headings, subheadings, review questions, goals, objectives, space, print, type size, color) to enhance readability.
- Makes use of various forms of media (e.g., CD's, recordings, videos, cassette tapes, computer software, web-based components) as either student or teacher resources
- Includes clear, accurate, appropriate and clearly explained illustrations and/or graphics that

Kentucky Department of Education
Science Adoption 2008-2014

reinforce content standards.

- Incorporates a glossary, footnotes, recordings, pictures, and/or tests that aid pupils and teachers in using the book effectively
- Uses grade-appropriate type size

Included media are durable, easy to use and have technical merit

- Construction appears to be durable and able to withstand normal use

2) Essential Components (beyond student and teacher text)

☒ Strong ☐ Moderate ☐ Little

- Items identified as essential components support the learning goals and concept coverage of the basal

3) Strengths, Weaknesses, Comments:

- Reviewers may provide page numbers to point out specific strong examples for individual evaluation standards.

The text is well organized and easy to work your way through. Essential components such as study guide, solutions manual, and the AP Instructors manual support the teacher and student text.

F. Has available Ancillary/ Gratis Materials

Note: The decision whether to recommend or not recommend this resource as a basal should not be influenced by Section F

☒ Strong Evidence
☒ Moderate Evidence
☐ Little or No Evidence

1) Ancillary/Gratis Materials

- Coordinates teacher resources easily with student material (e.g., accompaniments included, student pages shown, instructional technology indicated).
- Are well-organized and easy to use
- Provide substantive learning opportunities and are congruent with student learning goals
- Provide opportunities for high-level thinking, assessment, and/or problem solving

2) Strengths, Weaknesses, Comments:

- Reviewers may provide page numbers to point out specific strong examples for individual evaluation standards.

Ancillary materials include an AP Instructors manual, solutions guide, and test generator among other items. The lab manual for the course is NOT included and would have to be purchased separately.